Watson (F. S.) From the Author's Compliments.

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FROM THE

# Male Bladder,

BY THE

*SUPRA-PUBIC OPERATION.*

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# A CASE OF PAPILLOMA OF THE MALE BLADDER SUCCESSFULLY REMOVED BY THE SUPRA-PUBIC OPERATION.[1]

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THE patient whom I show here to-night, is a man of thirty-one years of age, who was referred to me by Dr. Forster, of Charlestown, early in July last. He had had several attacks of clap, from all of which he had made a complete recovery; with this exception had been entirely well up to seven months previously.

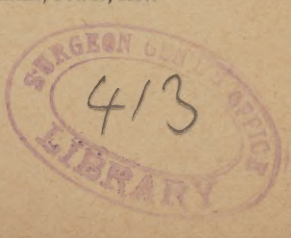
At that time, without provocation, he passed a good deal of blood with the urine, and pain attended the act; two months later he began to notice an increased frequency of micturition, and also observed some fleshy-looking bodies in the urine.

These symptoms, namely, hæmaturia, frequent urination, pain on passing water, and the passage of small fleshy bits, continued, with occasional remissions, up to the time I first saw him. The presence of blood and pain was not dependent upon exertion.

The patient steadily lost flesh and strength, and was going down hill fast. Examination showed the following condition: meatus, 21 (French). A No. 21 steel sound passed smoothly into the bladder. Search for stone was negative, nor did the sound meet with any abnormal obstruction.

Rectal examination gave a prostate of normal size and consistency. The bladder wall was pliant and of normal character, except that just above the base of the right lobe of the prostate, there was a small area of

[1] Reported to the Society for Medical Improvement, Oct. 10, 1887.



increased resistance. There was no tenderness upon pressure above the pubes, and bi-manual palpation with one finger in the rectum and the other hand above the symphysis pubis, revealed nothing abnormal. The urine was drawn, and the bladder washed out with a large-eyed silver catheter. In the washings were several small fleshy-looking masses.

Examination by Dr. W. W. Gannett showed them to be very characteristic pieces of a papilloma.

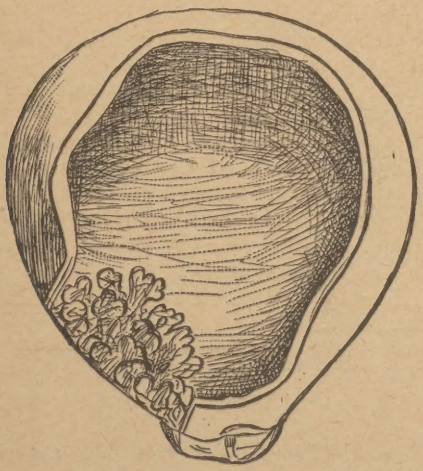
The urine contained much blood and pus, a large number of epithelial cells, some of which had very large nuclei. The examination increased the hæmorrhage, but not seriously. The diagnosis was made of a sessile papilloma, situated on the floor of the bladder, immediately above the right lobe of the prostate, which was subsequently found to be the case.

July 19th. The patient was etherized, Drs. Forster, Cabot, Tilden, Elliot, Cushing and Lovett being present. The supra-pubic operation was performed, after the manner recommended by Peterson, thus:

The bladder was emptied, and washed out with warm four per cent. boracic-acid solution, ten ounces of the same were left in the bladder. The pear-shaped balloon was then inserted into the rectum, and ten ounces of warm water were injected into it, dulness on percussion then became evident for about four finger's breadths above the symphysis pubis, but the bladder did not protrude forward.

The anterior surface of the viscus was then exposed by an incision through the linea alba. The peritoneal covering was *not* seen, a tenaculum was inserted into the bladder at the upper angle of the wound to steady it, and it was then freely incised in its long axis. The growth was found exactly where it was expected, a sessile papilloma, for the most part not much raised above the surface, having two longer

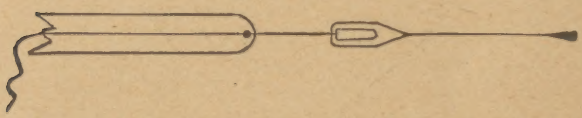
branches however, and covering a surface of the mucous membrane about one and a half inches by half an inch. (Its situation and character, are approximately shown in the accompanying diagram.) It was removed by the finger-nail and a curette, and bled very freely.



An attempt was made to get a good view of the bladder by means of the electric light. But it was of no use for this purpose, the growth being at the bottom of a deep pocket which was constantly filled with blood.

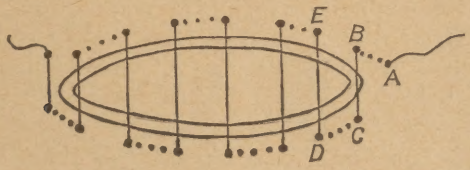
Before removing all the growth, perineal section was performed for the sake of ultimate drainage, and in order to keep a constant current of hot boric solution passing through the bladder and out over the pubes to wash away clots and keep the wounds clean. This step greatly aided us in the rest of the operation.

The perineal opening was made by passing a large steel sound through the vesical neck, *from within*, lodging its point in the membraneous urethra, and then cutting down upon this from the perineum. The wound thus made was small, only just large enough to admit a No. 29 (French) large-eyed catheter, which was passed through the wound into the bladder in the manner recently recommended by Dr. Keyes, of New York; namely, by threading the catheter upon a knotted string which passes through the closed end of the instrument, against the inner surface of which the knot catches. This end of the thread is then tied to a probe which is passed through the wound into the bladder, and the catheter is drawn after it. The thread being then cut between the probe and the catheter end, is withdrawn by the end which hangs from the mouth of the instrument.



The wound in the bladder was then sutured, Dr. H. W. Cushing's continuous intestinal stitch being employed, and fine black sewing silk used. The ellipse represents the bladder wound; the suture begins at the right hand angle and ends at the left. The dotted lines represent the course of the stitch parallel to the long axis of the wound, running between the outer and inner wall of the bladder just above the mucous membrane, taken a short distance from the border of the cut surface, entering for example at *A*, going beneath the surface to *B*, crossing the wound to *C* again, penetrating the muscular layer at *C* to pass to *D*, across the wound again to *E*, and so on. When

drawn tight the edges of the wound are slightly inverted and the suture buried out of sight. This suture is the neatest and most satisfactory one with which I am acquainted.




After its application, the bladder was filled to test its efficacy and found perfectly tight. The outer wound was then united by deep sutures, except at the lower angle into which two rubber drainage-tubes were inserted. Antiseptic dressing was applied and antiseptic precautions pursued throughout.

Hæmorrhage into the bladder continued during the day of the operation. The perineal drainage-catheter did not drain a drop of blood or urine through it. Vesical tenesmus was exceedingly severe during several hours succeeding the recovery from ether, the bladder straining to force out the clots which were too large and dense to issue through the catheter and urethra. Morphia failed to relieve this symptom, and in the evening the perineal drainage-tube was removed. The tenesmus was relieved, but did not cease for two days. As a consequence, a portion of the bladder suture gave way, allowing the escape of urine by the pubis. Tenesmus ceased entirely after this, and the patient was much more comfortable. Six days after the operation blood ceased to appear in the urine, and there has been none since.

In the hope of hastening the closure of the bladder-wound a catheter, *à demeure*, was placed in the blad-

der through the urethra. No urine passed after this by the wound so long as the catheter, which was changed daily, was in the bladder, and the wound closed rapidly. A severe cystitis, however, came on, due, I think, to the presence of the catheter, and it was removed at the end of ten days. A fistulous tract persisted in the upper wound after this until September 12th, when it closed entirely, at the end of seven weeks and a half from the date of operation. Its healing was, I think, hastened by the use of iodoform pencils. The bladder was irrigated twice daily during the larger part of the patient's convalescence with warm boric four per cent. solution, which though not so strong an antiseptic as some others in use has become, owing to its unirritating qualities, the favorite bladder wash. Under the use of this remedy and the internal administration of acetate of potash and sandalwood oil, the cystitis has entirely disappeared, and the function of the patient's bladder is now perfectly normal; he can hold ten ounces of urine without the least discomfort, and urinates only once in four or five hours, and entirely without pain or annoyance. The perineal wound healed in a few days. The patient is now absolutely well, in every respect; he has gained fifteen pounds of flesh, and says he never felt better in his life.

This case is one of a class which, but a few years ago our best authorities would have pronounced hopeless, and allowed to die without interference. The fact that instead of such an outlook, we can from time to time, not only save the life of such patients, but as in the case here shown restore them to entire health and comfort, marks one of the most notable advances of modern surgery.

I do not propose to go into the subject of tumors of the bladder here, at all exhaustively, but simply to use

this case as a text in outlining some of the main points in connection with this interesting subject. There is reason to believe, in spite of the free discussions and frequent careful reports of such cases as this, that many are still overlooked; whenever one is dealing with a case in which hæmaturia is a prominent symptom, too much care cannot be taken to discriminate carefully as to its source in the genito-urinary tract (by no means an easy task in many instances.)

The main characteristics of hæmorrhage arising from a growth in the bladder, are, that it is independent of exertion, frequently being most marked when the patient is at rest. The blood is usually fresh. If a catheter be passed the first jet flowing through it is apt to be bloody. If co-existant renal disease be absent, shown by the absence of casts, (through bodies closely resembling blood-casts are sometimes seen in the urine when the disease is limited to the bladder), if stone be absent, and if there are found associated with the blood in the urine many polymorphous cells, with large nuclei, the presumption is that there is a new growth in the bladder. If, in addition, by washing the bladder, or by movements of the catheter, bits of the tumor can be found, the diagnosis is of course, certain.

If the patient be elderly, the chances are that the disease is cancerous; if young, a benign papilloma is the probability. In the former class the prognosis is necessarily bad as to life, in the latter fairly good, if properly treated.

The diagnosis once established, we enter upon a much more debatable ground in considering the operative measures for the relief of the disease.

All surgeons agree that the removal of benign growths should be attempted. The division of opinion comes in cases of cancerous growths. Sir Henry

Thompson who has had a larger experience in this class of cases than any one else, refuses to operate upon cancerous cases at all. Guyon, and other French surgeons' experience, on the other hand, has been confined chiefly to cancerous growths, upon which they have operated as a measure of relief.

My first case of this kind which resulted fatally from an extension of the disease, about three months after operation, and which I reported to this Society about four years since, was one of primary cancer of the bladder; the patient had had great suffering from attacks of retention, vesical tenesmus, and frequent and painful urination. The operation I then performed was a perineal section, scraping away with a currette all the villous surface of the growth I could, giving a thorough stretching to the vesical orifice and perineal drainage.

The result was a cessation of the hæmorrhage and great comfort to the patient for several weeks preceding his death. And in studying the results of similar cases in the hands of other practitioners, I find that relief has followed operative treatment in the majority of instances. This, it seems to me decides the question without further debate, and I cannot see any reason for refusing to operate, to drain the bladder at any rate, even in cancerous disease.

Having decided to interfere, what operation shall we choose? The choice lies between the perineal route to the bladder and the supra-pubic. Here again we meet with a division of opinion. Thompson, who originated and practised the digital exploration of the bladder, advocates always making such an exploration through the perineum at any rate as a previous step, to find out what is before the operator, and is then governed according to circumstances. If, for example, he finds a broad-based large tumor, he relin-

quishes the attempt to extract it by the perineal opening, and proceeds to its removal by the supra-pubic method, which, he thinks, can be equally well done after the preliminary operation.

If he finds a pedunculated or a friable sessile growth of a benign nature he proceeds to remove it by blunt biting forceps or a curette, or his finger-nail, at once through the perineal wound.

Guyon and the French and German surgeons for the most part reject entirely the perineal operation, and practice the supra-pubic method. The chief claim put forth by the advocates of this procedure is that it gives a clear field of view for the operation, and that you can see as well as feel what you are about, and that there is more room to work in.

The latter operation was practically recreated by Peterson, who, in 1881, showed that by filling the bladder with from 400 to 600 cubic centimeters of fluid, and injecting the same quantity into a pear-shaped colpeurynter placed in the rectum, the bladder is raised and carried forward against the abdominal wall, in such a way that it is much easier of access above the pubes, and more especially that its anterior surface, so apposed, is free from peritoneum to the extent of from two to four finger breadths, thus avoiding what had always been considered one of the great dangers of the operation ; namely, the wounding of the peritoneum. Under these conditions the operation sprang again into great popularity, and has, it seems to me, been carried somewhat too far, especially in dealing with stone. The best record of mortality it can show in the hands of skilful operators is about 14 per cent.

Two further questions are to be considered in the performance of the supra-pubic operation. Should the bladder be sewed up, after the removal of the

growth or should it not, and should perineal section for purposes of drainage of the bladder be done as a supplementary operation or should a catheter be left in the bladder and urethra without perineal section?

The former question is a very interesting one, but involves a longer discussion than can be entered upon here. I will only outline a few of the main points concerning it.

The Frenchmen, for the most part, leave the bladder and outer wound open, and either let the urine drain as it will through the wound until healed, or place long, double drainage-tubes in the bottom of the bladder, and carry them out over the pubes, in the hope of their acting as a syphon, frequently, also, placing a catheter, *à demeure*, in the bladder through the urethra. It may be said here that neither the double drains nor the catheter, no matter of what size or shape, or how placed, will effectually prevent the urine from running over the edges of the wound and surrounding tissues, and that, so far as avoiding contact of the urine with the wound, the tubes are practically useless.

Among the Germans, we find the strongest advocates of the bladder-suture. Into the various methods of applying, which I will not now enter, but merely mention that the number of cases in which the suture has been applied is about sixty, and that about thirty per cent. of these have been successful; namely, have healed by first intention, and, even in such cases as the suture has given way, the ultimate recovery has not been prejudiced.

The decision as to whether you shall apply the suture or not depends, I think, upon what you have left behind in the bladder. My own case would make me very unwilling to sew up again where I had left a bleeding surface. I made a mistake, it is true, I

think, in using no larger a perineal drainage-tube, but even that which *was* employed helped to excite vesical tenesmus, for this symptom was greatly relieved upon removing it. Moreover, I should think that the end of the tube, resting against the raw surface of the wound made by removing the growth, as it would do in an empty bladder, would cause renewed bleeding, and so keep up the accumulation of clots, which were also responsible, I think, for the vesical tenesmus, which, after the operation, was so great that I am confident that no suture could have resisted the strain, but must have given way, and, until it broke, the pain was excessive. Another consideration is the presence or absence of cystitis. Here, one is placed between two fires. The foul urine, making its escape through the wound, increases the chance of sepsis. On the other hand, a bladder which is the seat of cystitis is less likely to unite when sutured, and, moreover, the thorough drainage which the open wound gives is about the best treatment for the cystitis. Furthermore, the bladder can be kept fairly clean by irrigating it thoroughly, two or three times a day, with hot boracic solution.

The conclusions I should reach in regard to applying the suture would be these:

(1) Where hæmorrhage is going on, or likely to occur to any great degree after the operation, it is better not to sew up the bladder.

(2) Where neither cystitis nor hæmorrhage are present at the conclusion of the operation, always sew up.

(3) Where severe cystitis is present, the decision is doubtful. Further experience is needed to decide this point.

The great argument in favor of applying the suture is that, if successful, it greatly shortens the convalescence, and decreases the risks of that condition.

If the suture is to be applied, silk should be employed and left in the wound, and the stitches should be taken through the submucosa as nearly as possible, but carefully avoid putting them through the mucous membrane itself. Having dealt with some of the important features of the supra-pubic section, let us return to the original question of the choice between this and the perineal operation.

It has always seemed to me that Sir Henry Thompson had the best of the argument in the discussion which took place between him and Professor Guyon on this subject, in advocating perineal section and the exploration of the bladder as a preliminary step for enlightenment in regard to the exact nature and location of the disease.

In the majority of cases, one cannot determine beforehand the extent and situation of the tumor, and often, not its exact nature. Perineal section is, in itself, not a dangerous operation, and, in case the tumor is of such a character that it cannot be removed, it leaves the patient (certainly when he has been the subject of painful urination) better off, on the chances, than he was before; and, if the tumor be of such a nature that it can be removed by the perineal opening, the patient has not been subjected to the more serious high operation. I think, however, exception should be made in the case of persons with hypertrophied prostates, for the possibility of reaching the bladder and working effectually in it is very doubtful.

The claim that one gets an open view of the field in supra-pubic cystotomy may sometimes be true, but I cannot conceive that this should be the case where bleeding is going on from the tumor, for then the view must, as it was in my case, be entirely obscured. Moreover, if the growth be situated on the floor of the bladder, about the trigonum, the distance to it by

the supra-pubic route is quite as great as by the perineal. I do not see how any general law can be laid down in regard to the best operation to be performed. The operator should be free from prejudice in regard to both, and ready to avail himself of either; but I can see no reason against his doing the perineal operation first, removing, by preference, from this point all such growths as are susceptible of being so treated; or, finding this impossible, to relinquish the effort, and proceed at once to the supra-pubic operation.

This brings us, naturally, to the consideration of the last point; namely, shall one do a perineal section as a supplementary operation to the supra-pubic for drainage? In my own case, the catheter failed wholly to drain the bladder, and was a source of pain as well. This, however, might have been different had I used a larger tube. But the question seems to turn more upon whether one intends to sew up the bladder wound or not. If yes, then a large perineal drainage-tube is the most efficacious means of keeping the viscus empty, and taking the strain off the stitches until healing is complete. It has seemed to me that this was a more certain means of accomplishing this end than by the ordinary catheter *à demeure*.

If the wound be left open, no further drainage is necessary, and the perineal opening is not called for.